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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,281	10/29/2003	Tougo Teramoto	15162/06240	6515

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EXAMINER

HERNANDEZ, NELSON D

ART UNIT	PAPER NUMBER
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2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/696,281	Applicant(s) TERAMOTO ET AL.	
	Examiner Nelson D. Hernandez	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-10 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 11-13 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/29/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. In the limitations “a detector for detecting whether or not each drive speed control value for said designated operation is within a structural resonance range of said image capturing part, to determine an objective drive speed control value which is within said structural resonance range among said plurality of drive speed control values” appears to mean “a detector for detecting whether or not each drive speed control value for said designated operation is within a structural resonance range of said image capturing part, to determine whether an objective drive speed control value which is within said structural resonance range among said plurality of drive speed control values”. The claim as written is indefinite since does not point out that the detector is detecting whether the objective drive speed is within structural resonance as disclosed in the specs. For examining purposes the limitations will be read as “a detector for detecting whether or not each drive speed control value for said designated operation is

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within a structural resonance range of said image capturing part, to determine whether an objective drive speed control value ~~which~~ is within said structural resonance range among said plurality of drive speed control values”.

Claims 2-4 depend from claim 1, which is rejected under 35 U.S.C. 112, second paragraph. Therefore, claims 2-4 are also rejected.

Claim Objections

4. **Claim 6** is objected to because of the following informalities: claim 6, “...of said first drive amount by said first driver,” is ended with a comma (,) and should be ended with a period (.). Appropriate correction is required.

5. **Claim 8** is objected to because of the following informalities: claim 8, “...as said alternative speed control value,.”, is ended with a coma followed by a period. It should be ended with a period. Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haba et al., US Patent 6,965,400 B1 in view of Hashizume, US Patent 6,816,288 B1.**

Regarding claim 11, Haba et al. discloses an image capturing apparatus (See fig. 13) comprising: a first driver (pan motor; col. 18, line 51 – col. 19, line 4) for changing a relative angle of an image capturing part (Fig. 13: 1100) to an image capturing apparatus body in a first direction; a second driver (tilt motor; col. 18, line 51 – col. 19, line 4) for changing said relative angle in a second direction; a controller (Fig. 13: 1200) for controlling said first and second drivers (Col. 18, line 51 – col. 19, line 4); and an instructor (Fig. 13: 1203) for instructing a designated amount of change in said relative angle for attaining a designated change in an image capturing direction, wherein said controller is operable to attain said designated amount of change in said relative angle with a combination of: a) a first control time period in which said controller controls said first and second drivers on the basis of first and second drive speed control values, respectively, and b) a second control time period following said first time period in which said controller controls said first and second drivers while stopping one of said first and second drivers (By teaching a power saving-mode wherein the tilt movement is controlled a time different from the pan movement, Haba et al. meets the limitations of “a first control time period in which said controller controls said first and second drivers on the basis of first and second drive speed control values, respectively, and b) a second control time period following said first time period in which said controller controls said first and second drivers while stopping one of said first and second drivers” since the controller is instructing the system to move the camera to the pan and tilt direction at different times in order to save power; Col. 18, line 51 – col. 19, line 18) (Col. 16, line 6 – col. 19, line 18).

Haba et al. does not explicitly disclose that the drive speed control values are determined out of a structural resonance range of said image capturing apparatus.

However, controlling the speed control value of a motor moving an image capturing apparatus determined out of a structural resonance range of said image capturing apparatus is well known in the art as taught by Hashizume. Hashizume teaches a method of adjusting the speed of a motor (stepping motor 1 as shown in fig. 1; col. 6, lines 11-44) moving an imaging device (Fig. 1: 34) based on the structural resonance range that the motor would create to the imaging apparatus at certain speeds in order to improve the image quality of the image being captured without the need of dampers to minimize resonant vibrations (Col. 6, line 11 – col. 7, line 39).

While it may not be explicitly stated in the Hashizume reference that the functionality of an electronic device such as a scanner may be realized by a camera (as shown in Haba et al.), it is well known to a skilled artisan that the scanner in Hashizume and the image capturing apparatus in Haba et al. are in the same field of endeavor as they are both imaging device, processing or manipulating image data.

Even if the scanner in Hashizume and the camera in Haba et al. are not in the same field of endeavor, which the examiner does not concede, the scanner in Hashizume and the camera in Haba et al. are reasonably pertinent to solving the problem of minimizing structural resonance by controlling the speed of a motor moving an imaging apparatus (see col. 6, line 11 – col. 7, line 39) and would have commended themselves to an artisan addressing such a problem. In re Clay, 966 F.2d 656, 658, 23 USPQ2d 1058, 1060 (Fed. Cir. 1992).

Therefore, taking the combined teaching of Haba et al. in view of Hashizume as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Haba et al. by controlling the drive speed control values based on a structural resonance range of said image capturing apparatus. The motivation to do so would have been to improve the image quality of the image being captured without the need of dampers to minimize resonant vibrations so the cost of other parts is reduced as suggested by Hashizume.

Regarding claim 12, the combined teaching of Haba et al. in view of Hashizume as applied to claim 11 teaches that the first and second drivers are first and second pulse motors (Hashizume discloses using a step motor (step motors are also known as pulse motors since they are driven by pulses); col. 6, line 11 – col. 7, line 39). Grounds for rejecting claim 11 apply here.

Regarding claim 13, the combined teaching of Haba et al. in view of Hashizume as applied to claim 11 teaches that the first and second drive speed control values are first and second pulse rates given to said first and second pulse motors, respectively (This is taught by Haba et al. in view of Hashizume since the motor in Hashizume is a pulse driven motor. Therefore, the combined teaching of Haba et al. in view of Hashizume would result in having the first and second drive speed control values being first and second pulse rates given to said first and second pulse motors, respectively). Grounds for rejecting claims 11 and 12 apply here.

Allowable Subject Matter

8. **Claims 5-10 are allowed.**

9. **Claims 1-4** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

10. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the limitations in the present claim, a detector for detecting whether or not each drive speed control value for said designated operation is within a structural resonance range of said image capturing part, to determine whether an objective drive speed control value ~~which~~ is within said structural resonance range among said plurality of drive speed control values; a changing part for changing said objective drive speed control value to an alternative drive speed control value to reduce a driving time period of said objective driver required for said designated amount of operation; and a controller for controlling said plurality of drivers with said plurality of drive speed control values in which said objective drive speed control value is changed to said alternative speed control value.

Regarding claim 5, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, including all the limitations in the present claim, that wherein, when resonance conditions that: i) said first drive amount is smaller than said second drive amount, and ii) said first drive speed control value is within a structural resonance range of said image capturing apparatus, are satisfied, said setting part changes said first drive speed control value to an alternative

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speed control value out of said resonance range, and when said resonance conditions are satisfied, said controller controls said second driver drive on the basis of said second drive speed control value and controls said first driver drive on the basis of said alternative speed control value such that said first drive amount is attained by said first driver within a time period in which said second drive amount is attained by said second driver.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following reference teach different methods to approach vibration in imaging devices:

Soshi et al., US Patent 5,708,266 (Moving lens with driving means to correct camera shaking)

Ohishi et al., US Patent 5,701,521 (Moving lens with driving means to correct camera shaking)

Kawahara, US Patent 6,982,746 B1 (A method of correcting camera shake using image processing)

Contact

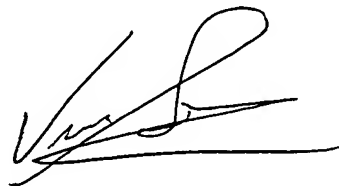
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernandez whose telephone number is (571) 272-7311. The examiner can normally be reached on 8:30 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson D. Hernandez
Examiner
Art Unit 2622

NDHH
February 17, 2007

A handwritten signature in black ink, appearing to read 'Vivek Srivastava', with a horizontal line drawn underneath it.

VIVEK SRIVASTAVA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600